CLAIMS

What is claimed is:

1. A method for identifying a combined ordering of masks corresponding to a plurality of access control lists (ACLs), the plurality of ACLs including n ACLs, the method comprising:

identifying a required ordering of masks for each of the plurality of ACLs;

generating an n-dimensional array wherein each axis of the n-dimensional array corresponds to masks in their said requisite order of a different one of the plurality of ACLs, the n-dimensional array progressively identifying numbers of different masks required for subset orderings of masks required for subsets of the plurality of ACLs; and

traversing the n-dimensional array to identify a sequence of masks corresponding to a single ordering of masks including masks required for each of the plurality of ACLs, wherein the single ordering of masks maintains the ordering of masks required for each of the plurality of ACLs with one or more masks corresponding to a different ACL or other feature in between one or more consecutive masks of an ACL of the plurality of ACLs.

2. The method of claim 1, wherein a last position identified by a last column and last row of the array identifies the number of different masks required for the single ordering of masks.

3. The method of claim 1, wherein the n-dimensional array is traversed based on said numbers of different masks required for subset orderings of masks required for subsets of the plurality of ACLs.

4. The method of claim 1, wherein said generating the n-dimensional array includes maintaining indications from where said numbers of different masks required for subset orderings of masks required for subsets of the plurality of ACLs are generated; and wherein the n-dimensional array is traversed based on said indications from where said

5   numbers of different masks required for subset orderings of masks required for subsets of the plurality of ACLs are generated.

5. The method of claim 1, comprising populating a plurality of block masks of an associative memory with said masks required for the plurality of ACLs such that the single ordering of masks is produced in the associative memory.

10   6. A computer-readable medium containing computer-executable instructions for performing steps for identifying a combined ordering of masks corresponding to a plurality of access control lists (ACLs), the plurality of ACLs including n ACLs, said steps comprising:

identifying a required ordering of masks for each of the plurality of ACLs;

15   generating an n-dimensional array wherein each axis of the n-dimensional array corresponds to masks in their said requisite order of a different one of the plurality of ACLs, the n-dimensional array progressively identifying numbers of different masks required for subset orderings of masks required for subsets of the plurality of ACLs; and

traversing the n-dimensional array to identify a sequence of masks corresponding

20   to a single ordering of masks including masks required for each of the plurality of ACLs, wherein the single ordering of masks maintains the ordering of masks required for each of the plurality of ACLs with one or more masks corresponding to a different ACL or other feature in between one or more consecutive masks of an ACL of the plurality of ACLs.

7. The computer-readable medium of claim 6, wherein a last position identified by

25   a last column and last row of the array identifies the number of different masks required for the single ordering of masks.

8. The computer-readable medium of claim 6, wherein the n-dimensional array is traversed based on said numbers of different masks required for subset orderings of masks required for subsets of the plurality of ACLs.

9. The computer-readable medium of claim 6, wherein said generating the n-dimensional array includes maintaining indications from where said numbers of different masks required for subset orderings of masks required for subsets of the plurality of ACLs are generated; and wherein the n-dimensional array is traversed based on said indications from where said numbers of different masks required for subset orderings of masks required for subsets of the plurality of ACLs are generated.

10. The computer-readable medium of claim 6, comprising populating a plurality of block masks of an associative memory with said masks required for the plurality of ACLs such that the single ordering of masks is produced in the associative memory.

11. An apparatus for identifying a combined ordering of masks corresponding to a plurality of access control lists (ACLs), the plurality of ACLs including n ACLs, the method comprising:

means for generating an n-dimensional array wherein each axis of the n-dimensional array corresponds to masks in a required ordering for a different one of the plurality of ACLs with , the n-dimensional array progressively identifying numbers of different masks required for subset orderings of masks required for subsets of the plurality of ACLs; and

means for traversing the n-dimensional array to identify a sequence of masks corresponding to a single ordering of masks including masks required for each of the plurality of ACLs, wherein the single ordering of masks maintains the ordering of masks required for each of the plurality of ACLs with one or more masks corresponding to a different ACL or other feature in between one or more consecutive masks of an ACL of the plurality of ACLs.

12. The apparatus of claim 11, wherein a last position identified by a last column and last row of the array identifies the number of different masks required for the single ordering of masks.

13. The apparatus of claim 11, wherein said means for traversing the n-dimensional array includes means for traversing the n-dimensional array based on said numbers of different masks required for subset orderings of masks required for subsets of the plurality of ACLs.

14. The apparatus of claim 11, wherein said means for generating the n-dimensional array includes means for maintaining indications from where said numbers of different masks required for subset orderings of masks required for subsets of the plurality of ACLs are generated; and wherein said means for traversing the n-dimensional array includes means for traversing the n-dimensional array based on said indications from where said numbers of different masks required for subset orderings of masks required for subsets of the plurality of ACLs are generated.

15. The apparatus of claim 11, comprising means for populating a plurality of block masks of an associative memory with said masks required for the plurality of ACLs such that the single ordering of masks is produced in the associative memory.

16. A method for identifying a combined ordering of masks corresponding to a first access control list (ACL) and a second ACL, the method comprising:

identifying a first ordering of masks required for the first ACL;

identifying a second ordering of masks required the second ACL;

5   generating a matrix of the first and second orderings of masks, the matrix progressively identifying numbers of different masks required for subset orderings of masks required for subsets of the first and second ACLs; and

traversing the matrix to identify a sequence of masks corresponding to a single ordering of masks including masks required for the first ACL and the second ACL,

10   wherein the single ordering of masks maintains the first ordering and second orderings of masks with one or more masks corresponding to a different ACL or other feature in between one or more consecutive masks of the first and second ACLs.

17. The method of claim 16, wherein a last position identified by a last column and last row of the matrix identifies the number of different masks required for the single

15   ordering of masks.

18. The method of claim 16, wherein the matrix is traversed based on said numbers of different masks required for subset orderings of masks required for subsets of the first and second ACLs.

19. The method of claim 16, wherein said generating the matrix includes

20   maintaining indications from where said numbers of different masks required for subset orderings of masks required for subsets of the first and second ACLs are generated; and wherein the matrix is traversed based on said indications from where said numbers of different masks required for subset orderings of masks required for subsets of the first and second ACLs are generated.

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20. The method of claim 16, comprising populating a plurality of block masks of an associative memory with said masks required for the first and second ACLs such that the single ordering of masks is produced in the associative memory.

21. A computer-readable medium containing computer-executable instructions for
5   performing steps for identifying a combined ordering of masks corresponding to a first access control list (ACL) and a second ACL, said steps comprising:

        identifying a first ordering of masks required for the first ACL;

        identifying a second ordering of masks required the second ACL;

        generating a matrix of the first and second orderings of masks, the matrix
10   progressively identifying numbers of different masks required for subset orderings of masks required for subsets of the first and second ACLs; and

        traversing the matrix to identify a sequence of masks corresponding to a single ordering of masks including masks required for the first ACL and the second ACL, wherein the single ordering of masks maintains the first ordering and second orderings of
15   masks with one or more masks corresponding to a different ACL or other feature in between one or more consecutive masks of the first and second ACLs.

22. The computer-readable medium of claim 21, wherein a last position identified by a last column and last row of the matrix identifies the number of different masks required for the single ordering of masks.

20   23. The computer-readable medium of claim 21, wherein the matrix is traversed based on said numbers of different masks required for subset orderings of masks required for subsets of the first and second ACLs.

24. The computer-readable medium of claim 21, wherein said generating the matrix includes maintaining indications from where said numbers of different masks required for subset orderings of masks required for subsets of the first and second ACLs are generated; and wherein the matrix is traversed based on said indications from where said numbers of different masks required for subset orderings of masks required for subsets of the first and second ACLs are generated.

25. The computer-readable medium of claim 21, wherein said steps comprise populating a plurality of block masks of an associative memory with said masks required for the first and second ACLs such that the single ordering of masks is produced in the associative memory.

26. An apparatus for identifying a combined ordering of masks corresponding to a first access control list (ACL) and a second ACL, the method comprising:

means for generating a matrix with a first axis corresponding to a first ordering of masks required for the first ACL and a second axis corresponding to a second ordering of masks required the second ACL, the matrix progressively identifying numbers of different masks required for subset orderings of masks required for subsets of the first and second ACLs; and

means for traversing the matrix to identify a sequence of masks corresponding to a single ordering of masks including masks required for the first ACL and the second ACL, wherein the single ordering of masks maintains the first ordering and second orderings of masks with one or more masks corresponding to a different ACL or other feature in between one or more consecutive masks of the first and second ACLs.

27. The apparatus of claim 26, wherein a last position identified by a last column and last row of the matrix identifies the number of different masks required for the single ordering of masks.

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28. The apparatus of claim 26, wherein said means for traversing the matrix includes means for traversing the matrix based on said numbers of different masks required for subset orderings of masks required for subsets of the first and second ACLs.

29. The apparatus of claim 26, wherein said means for generating the matrix

5 includes means for maintaining indications from where said numbers of different masks required for subset orderings of masks required for subsets of the first and second ACLs are generated; and wherein said means for traversing the matrix includes means for traversing the matrix based on said indications from where said numbers of different masks required for subset orderings of masks required for subsets of the first and second

10 ACLs are generated.

30. The apparatus of claim 26, comprising means for populating a plurality of block masks of an associative memory with said masks required for the first and second ACLs such that the single ordering of masks is produced in the associative memory.

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